

# XSG SIG Executive Summary

- **XSG SIG on 14 September 2005 in Atlanta, GA**
  - 23 representatives included NASA (JPL, GSFC, MSFC), ESA, CNES, OMG SDTF, and other participation
- **Intention**
  - Establish guidelines and recommended practices for CCSDS XML schema, naming, and usage before this first set of schema, from several different working groups, become finalized and externally visible
  - Define common rules, naming and style guides, define URL hierarchy and namespace architecture, define versioning and use schema location as a resolvable URL
- **Motivation:**
  - Get CCSDS namespace and rules sorted out before current standards are finalized
  - Four separate XML schemas are in development, there is no consistency of naming, usage, namespace, etc across them
  - Enable interoperable implementations of SW and systems
  - Create collaborative solutions and an authoritative source for CCSDS and agency use

- Create a small working group of current XML schema authors and experts to develop short term approach
- XML Stds & Guidelines SIG
  - Erik Barkley
  - David Berry
  - Lou Reich (chair)
  - Gerry Simon
  - CNES ? (Lapaian acting)
  - ESA ? (Peccia acting)
- Define a URL hierarchy and namespace architecture
- Create a naming and style guide, including guidelines for development of schema and namespace
- Define versioning approach
- Create a resolvable URL for schemaLocation, ( create a CCSDS server for these, future)
- Define levels of XML schema reusable components (potentially based on the UBL model)
- Define approach for consistent use of qualified and unqualified types, elements and attributes
- Get a CCSDS NID by submitting an RFC to IETF, establish base for URN, list of 23 exist now (RFC 3406, May 2005), see also IANA registry of URI (RFC 3986)

- **Attendees:**
  - Erik Barkley, David Berry, Lou Reich, Gerry Simon, Felipe Flores, John Pietras, Leo Hartman, Paul Pechkam
- **Clarification of Goals**
  - Goal is Guidance not Standards
  - Changes to Current Books are at the discretion of Current WG not this group. We can do experiments to demonstrate tradeoffs or “examples” using current areas of knowledge
  - Namespace and versioning - low impact
  - High - Guidelines and style guide
    - Design issues
      - Do one function with one construct
    - All element and type name are upper camel case
    - All Attribute names are in lower camel case
      - Heritage Issues
        - NAV XML - Elements all Caps for consistency with ASCII
        - SLE Man - Use of nested choice, units attributed for documentation
        - XFDU - use of lower camel case for everything, use of substitution groups for extensibility

- 10:00-10:10 Introduction and Agenda Review
- 10:10-10:30 XML Schema Best Practices->Naming and Design Rules
  - 2001-Roger Costello starts Best Practices Web Site(xfront.com)
  - 2002-2004 - Problems with inconsistent tools and frequent use of JAVA binding tools that do not support full XML Schema cause many organizations to create internal best practice documents limiting the use of some XML Schema constructs. These could be considered “profiles” of XML Schema
  - 2005 - UN/CEFACT NDR based on UBL Published becomes core of many “best Practices/profiles”(see <http://xml.coverpages.org/ni2005-08-19-a.html>)
- 10:30 Specific Issues
  - What are the real CCSDS Requirements
    - CCSDS is not eBIZ, however the basic architecture may apply as is being attempted in US Federal NDR
    - Extensibility
    - Reuse Architecture
    - Schematron
  - Namespace issues
    - URN vs URL
    - IANA Registration Hierarchical definition

- **Attendees:**
  - Erik Barkley, David Berry, Lou Reich, Gerry Simon, Nestor Peccia, Martin Soto
- **Introduction/Announcement of new members**
  - **ESA-Martin Soto**, <soto@iese.fhg.de> Fraunhofer Institute for Experimental Software Engineering (IESE)
  - **CNES-Arnaud Lucas** [-arnaud.lucas@cnes.fr](mailto:arnaud.lucas@cnes.fr) -CNES
- **Review of email material and posting on CWE**
  - Lou Reich briefly reviewed each documents sent with the agenda package. The emphasis was Roger Costello's note, the US Federal Naming and Design Rules(NDR), and XML Schema tutorial produced by Patricia Walmsey, Datapic
  - Gerry Simon comments that the NDR documents had too many rules and were too long to read. He suggested using R. Costello's document as a focus for our work
  - There was general agreement on the complexity of the NDR documents. Lou noted that both documents were oriented towards an ebusiness set of requirements and CCSDS needed to review and verify those requirements for the CCSDS environment
  - The group also discussed IETF NID Registration and the RFC submitted by the Open Geospatial Consortium to register a top level URN

- **Discussion of Short-term Workplan**
  - **Nestor Peccia led discuss of resources and deliverables through January 2006**
    - General agreement that URN structure specification and registration, usage of schemaLocation and targetNamespace and Versioning issues are top priorities due to low impact on current draft Redbooks and long-term significance
    - General Agreement on end-of-year goal for first version of formal documents to CESG
    - Preliminary documents and editors
      - CCSDS XML Schema Namespace and Versioning -NASA
      - CCSDS RFC to IETF(IANA) for Namespace ID(NID)-ESA
    - Concept Paper reshaping UN/EDIFACT NDR namespace and versioning sections to CCSDS
      - Partial draft for discussion Lou Reich/Eric Barkley - 17-October-2005
    - Next telecon - October 20,2005 1000 EDT

## Backup Slides

- a flexible federal modularity model that defines the structure for creating interoperable schema and schema modules
- a clearly defined namespace scheme that ensures consistency across Agencies
- a versioning scheme that will support consistency in versioning of government schema
- a Federal canonical schema for base Data Types
- specific NDR's by government agencies or communities of practice that build on this document
- a reference to use for a mapping of different agency NDR's to each other



- **consistent, reusable XML components that may be made available for reuse such as:**
  - Schema
  - Schema Modules such as reusable code lists and identifier lists
  - Simple and Complex Types
  - Elements
  - Attributes
- **a set of tools to facilitate ease of development, validation, and interoperability**

## Roger Costello's Automated Versioning

- **Recommendation 1:** To avoid breaking namespace-aware applications with each new version of an XML Schema use the same namespace for all versions.
- **Recommendation 2:** To prevent breaking old instance documents give the new Schema version a different filename or a different URL location or both.
- **Recommendation 3:** To facilitate an application in recognizing that an element's content has changed, don't use anonymous types. Instead, use named types.
- **Recommendation 4:** If you change a type when you create a new version of a Schema then give the type a different name.

## Roger Costello's Recommendation on Versioning

- **Recommendation 5:** Change the name of an element's type only if its *immediate* content has changed.
- **Recommendation 6:** Use a version attribute on the root element. If an instance document is a compound document - that is, an assembly of XML fragments - then place a version attribute on the root of each fragment.
- **Recommendation 7:** Applications should use the tag names to locate data in instance documents. Applications should be designed to anticipate that the order of tags may change.
- **Recommendation 8:** Define a system-wide protocol (e.g., fault reporting mechanism) to be used when an application is unable to process an instance document it receives from another application.